

# Unit Testing

Dylan Lane McDonald

CNM STEMulus Center  
Web Development with PHP

November 11, 2015

# Outline

- 1 Unit Testing
  - About Unit Testing
  - Executing Unit Tests

# Unit Testing

Unit testing has already been alluded to in this set of slides. But a more complete definition would be:

## Definition

*A **unit test** is a function that tests another function (a unit) for a specific set of inputs and conditions and expects a specific outcome and outputs.*

# Unit Testing

Unit testing has already been alluded to in this set of slides. But a more complete definition would be:

## Definition

*A **unit test** is a function that tests another function (a unit) for a specific set of inputs and conditions and expects a specific outcome and outputs.*

Notice the use of the word **unit** in the term unit test. In agile, programming units are the **smallest functionality possible** that accomplish the given task or objective. One keystone of agile design and methodologies is the fact that a problem is composed of many small units. This is what facilitates Agile's flexibility.

# Unit Testing Terminology

Add all these terms to your lexicon.

- **Assertion:** A testable condition the unit test is testing for. For example:
  - *Assert  $x$  is in array  $A$*
  - *Assert  $x < y$*
  - *Assert  $x$  is not **NULL***
- **Throws:** An assertion that succeeds if and only if an exception is thrown
- **Setup:** A function that sets up testing conditions to be run before the unit test is executed
- **Tear Down:** A function that destroys the test data created by setup or the unit test after the unit test is executed

# Unit Testing Process

## Unit Testing Process

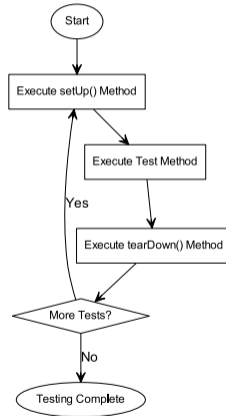


Figure 1: Unit Testing Process